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Black and White Lies: Race-Based Biases in Deception Judgments

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Abstract

In six studies (N = 605), participants made deception judgments about videos of Black and White targets who told truths and lies about interpersonal relationships. In Studies 1a, 1b, 1c, and 2, White participants judged that Black targets were telling the truth more often than they judged that White targets were telling the truth. This truth bias was predicted by Whites' motivation to respond without prejudice. For Black participants, however, motives to respond without prejudice did not moderate responses (Study 2). In Study 3, we found similar effects with a manipulation of the targets' apparent race. Finally, in Study 4, we used eye-tracking techniques to demonstrate that Whites' truth bias for Black targets is likely the result of late-stage correction processes: Despite ultimately judging that Black targets were telling the truth more often than White targets, Whites were faster to fixate on the on-screen "lie" response box when targets were Black than when targets were White. These systematic race-based biases have important theoretical implications (e.g., for lie detection and improving intergroup communication and relations) and practical implications (e.g., for reducing racial bias in law enforcement).

Keywords

intergroup dynamics, social perception, prejudice, open data

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Detecting lies is challenging, but important. From social relationships to professional negotiations to law enforcement, successfully identifying lies facilitates healthy relationships, satisfying economic exchanges, and meaningful security (Belot, Bhaskar, & van de Ven, 2010; Carton, Kessler, & Pape, 1999; Maccario, 2012). Yet detecting lies is difficult (DePaulo et al., 2003), and typically people's success at detecting lies is only slightly better than chance (54% accuracy vs. 50% guessing; Bond & DePaulo, 2006; Vrij, Edward, Roberts, & Bull, 2000).

In the studies reported here, we departed from this research tradition (i.e., inquiring about whether people are poor deception detectors) by asking whether people are biased deception detectors. Calling other people "liars," regardless of accuracy, has meaningful consequences. Because of this, people typically show a *truth bias*, more often judging that people are telling the truth than that they are lying (i.e., favoring *truth responses* over *lie responses*) in lie-detection tasks (Levine, Park, & McCornack, 1999). In the current research, we investigated whether race influences this truth bias; in other words, does race influence the propensity to label someone a "liar"? The question of whether perceivers' and targets' group memberships (e.g., White jurists judging Black defendants) bias decisions of deception or trust is both practically important (e.g., improving courtroom decisions) and theoretically important (e.g., informing lie-detection and intergroup-relations literatures).

Previous work suggests that characteristics of targets (e.g., attractiveness; Bond & DePaulo, 2008; Porter, Campbell, Stapleton, & Birt, 2002) or perceivers (e.g., mood; Forgas & East, 2008) can influence trustworthiness judgments. However, the literature's emphasis on accuracy means that little past work has investigated systematic biases in truth/lie judgments (cf. Bond & DePaulo, 2008). In the current study, we adopted a signal detection

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framework to delineate truth bias (our research interest and subject of our primary analyses) from sensitivity (the traditional research focus; for results demonstrating a majority-group advantage, i.e., better differentiation of truths from lies for White targets compared with Black targets, see the Supplemental Material available online).

Indeed, documenting biases in deception judgments may be especially important in intergroup contexts in which group memberships could influence judgments or induce mistrust (Dovidio, Gaertner, Kawakami, & Hodson, 2002). For example, in-group favoritism may trigger trust toward in-group members but skepticism of out-group members (Turner, Brown, & Tajfel, 1979). Alternately, people can enter intergroup interactions motivated to deceive. For example, in interracial interactions, Whites often use ingratiation strategies, which can conceal prejudice or incorporate deception (Mendes & Koslov, 2013; Shelton, Richeson, Salvatore, & Trawalter, 2005).

We posit two competing hypotheses rooted in the intergroup-relations literature about how race might bias deception judgments. First, people may exhibit *in-group favoritism* (Turner et al., 1979) by labeling racial in-group members as truthful more often than racial out-group members are labeled as truthful. Second, truth bias may be influenced by motives to avoid appearing or being prejudiced. Specifically, *prejudice-related concerns* could lead people, and Whites in particular, to avoid labeling Blacks (relative to labeling Whites) as liars. Either to affirm egalitarian beliefs (Plant & Devine, 1998) or to avoid being perceived as racists (Crandall, Eshleman, & O'Brien, 2002), Whites sometimes inflate their positivity toward Blacks (Mendes & Koslov, 2013). When concerns about racism are salient, Whites may respond effusively toward Black partners, report desire for interracial contact, and show favoritism toward Black applicants (Bergsieker, Shelton, & Richeson, 2010; Kunstman, Plant, Zielaskowski, & LaCosse, 2013).

If prejudice-related concerns bias deception judgments, Whites should label Blacks as truthful more often than Whites. Moreover, individual differences in prejudice-related concerns should also predict the strength of this bias. Specifically, whereas perceivers who have lower internal and external motivation to control prejudice (i.e., "unmotivated" perceivers; Plant & Devine, 1998) should show relatively less truth bias for Black targets, individuals who have higher internal motivation but lower external motivation to control prejudice (i.e., "effective" regulators of prejudice; Butz & Plant, 2009) should show stronger truth bias for Black relative to White targets. Indeed, past research has shown that Whites who have high internal and low external motivations regarding prejudice-related concerns show the most robust regulation of prejudiced behavior (e.g., Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). If Whites' prejudice-related concerns heighten truth bias for Black targets, this would elicit an apparently ironic effect—perceivers who tend to regulate prejudice across situations should be the ones most likely to display a race-based response bias by selecting the truth response more often for Black targets than for White targets.

We investigated these competing hypotheses in six studies. In Studies 1a through 1c, we used a deception-judgment task involving Black and White targets to assess White participants' (a) motives to respond without prejudice and (b) response biases. In Study 2, we tested whether we could replicate and extend findings from Studies 1a through 1c for both Black and White participants, and we examined boundary conditions for the effects documented in Studies 1a through 1c. In Study 3, we used an audio-visual mismatch paradigm to investigate the unique effects of targets' apparent (but not actual) race on deception-judgment biases. Finally, in Study 4, we used eye tracking to explore dissociations between deliberative and spontaneous biases in deception judgments.

Study 1a

Method

Statistical power and participants. We were unaware of previous research examining race effects for targets or perceivers in deception judgments. Thus, to estimate the expected effect size, we drew from Bond and DePaulo's (2008) meta-analytic review (r = .39). An a priori power analysis indicated that 67 participants would be needed to achieve 80% power for our primary multiple regression analyses, which included three predictors and one covariate (Faul, Erdfelder, Lang, & Buchner, 2007). Seventy-six White undergraduate students (61% female; mean age = 19.25 years, SD = 0.96) participated in this study exchange for partial course credit.

Procedure. Participants were randomly assigned to view one of two sets of 40 deception-judgment videos (Lloyd et al., 2017; for details on the development of the stimuli, see the Supplemental Material). Videos featured Black and White college-age individuals describing acquaintances; each set of videos featured 20 positive descriptions and 20 negative descriptions, and valence was balanced across race. Participants saw each target person twice, once when the target was lying and once when the target was telling the truth. Within each set, videos were presented in random order. After each video, participants provided a truth/lie judgment, and they had an unlimited amount of time to respond. Participants were instructed that they might see the same individual multiple times but that they should base their judgments only on the current video because some individuals

might tell only lies, some might tell only truths, and some might tell a combination of truths and lies.

After the deception-judgment task, participants completed Plant and Devine's (1998) Internal and External Motivation to Respond Without Prejudice measure, an assessment of prejudice-related concerns. This scale includes 10 items: 5 items on the internal motivation scale (IMS) and 5 items on the external motivation scale (EMS). IMS items capture personally endorsed, internalized goals (e.g., "It is important to my self-concept to be nonprejudiced toward Black people"), and EMS items focus on extrinsic reasons to avoid prejudice (e.g., "I act in a nonprejudiced way toward Black people because I want to avoid disapproval from others"). Participants responded to the IMS (M = 7.27, SD = 1.64, α = .89) and EMS (M = 5.80, SD = 1.49, α = .73) items on a 9-point scale, ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Past research indicates that these distinct motives (i.e., internal and external) to respond without prejudice interact to predict race-related biases and expressions of prejudice (Butz & Plant, 2009; Devine et al., 2002; Plant & Devine, 1998). Specifically, whereas White participants lower in both internal and external motives to respond without prejudice are "unmotivated" and thus fail to regulate bias in intergroup contexts, White participants higher in internal motives but lower in external motives appear consistently effective at regulating prejudice even to the point of favoring Black over White targets (Devine et al., 2002).

Participants then completed Glaser and Knowles's (2008) Implicit Motivation to Control Prejudice task, which was designed to assess egalitarian goals and concerns that operate outside of conscious awareness. The task did not predict truth bias for either Black or White targets ($p > .157$), and thus we did not analyze the data any further.

Participants also completed a five-item measure of quality and quantity of contact with African Americans (α = .84; Correll, Park, Judd, & Wittenbrink, 2002) and a demographics questionnaire assessing age, race, sex, and country of origin. Contact predicted truth bias for neither Black nor White targets, and it did not moderate any effects reported (ps > .364), and thus we did not analyze the data any further. Finally, participants were debriefed and thanked.

Results

Response bias, or the tendency to have a lower or greater psychological threshold to render a given response, was calculated using criterion (c) from signal detection theory. Criterion scores were determined separately for White targets and Black targets by first calculating the proportions of *hits* (i.e., correct identifications of lies) and *false alarms* (i.e., calling truthful statements lies). Full or empty cells (i.e., cells with a proportion of 1 or 0, respectively) were replaced with .99 and .01, respectively, as is common in signal detection analysis (Macmillan & Kaplan, 1985). These proportions were standardized, and c was calculated by adding the standardized measures of hits and false alarms before dividing by −2. Thus, greater c values indicated more truth responses and fewer lie responses, which is indicative of the classic truth bias.

Of primary interest was whether the targets' race influenced the perceivers' threshold to label targets as liars. Participants more often responded with "truth" for Black targets (mean c = 0.34, SD = 0.43, 95% confidence interval, or CI = [0.25, 0.44]) than for White targets (mean c = −0.17, SD = 0.53, 95% CI = [−0.29, −0.05]), paired-samples $t(75)$ = 7.64, $p < .001$, 95% CI for the difference in means = [0.37, 0.64], d = 0.88. This finding supports the prejudice-related-concerns hypothesis. Indeed, participants demonstrated a large truth bias for Black targets, one-sample $t(75)$ = 6.96, $p < .001$, d = 1.61, but a lie bias for White targets, one-sample $t(75)$ = −2.74, p = .008, d = −0.63.

If, as we hypothesized, this truth bias for Black targets was driven at least in part by prejudice-related concerns, then the magnitude of this bias should be predicted by individual differences in IMS and EMS scores. Specifically, we predicted an interaction between IMS and EMS scores. To investigate this, we regressed truth bias for Black targets on centered IMS score, centered EMS score, and their interaction (product term), and we also entered truth bias for White targets as a covariate. We included truth bias for White targets to test whether truth bias for Black targets varied as a function of race-based motives over and above responses toward White targets. The anticipated interaction between IMS score and EMS score was marginally significant, b = −0.03, 95% CI = [−0.06, 0.00], β = −0.22, $t(71)$ = −1.94, p = .056. For low EMS scores (i.e., 1 SD below the mean), the IMS score positively predicted truth bias for Black targets, b = 0.08, 95% CI = [0.01, 0.14], β = 0.29, $t(71)$ = 2.29, p = .025, such that as IMS scores increased, truth bias for Black targets also increased. However, for high EMS scores (i.e., 1 SD above the mean), this effect was eliminated, b = −0.02, 95% CI = [−0.10, 0.07], β = −0.06, $t(71)$ = −0.35, p = .730. As shown in Figure 1 (top left), Whites who were relatively unmotivated to respond without prejudice (i.e., those with low IMS and EMS scores) showed the least truth bias for Black targets.

Study 1b

Study 1b was a direct replication of Study 1a, except that we used a different measure of intergroup contact and did not use the Implicit Motivation to Control Prejudice task.

Method

Participants. Sixty-five White undergraduate students (59% female; mean age = 18.64 years, SD = 1.05) participated in exchange for research credit for a course.

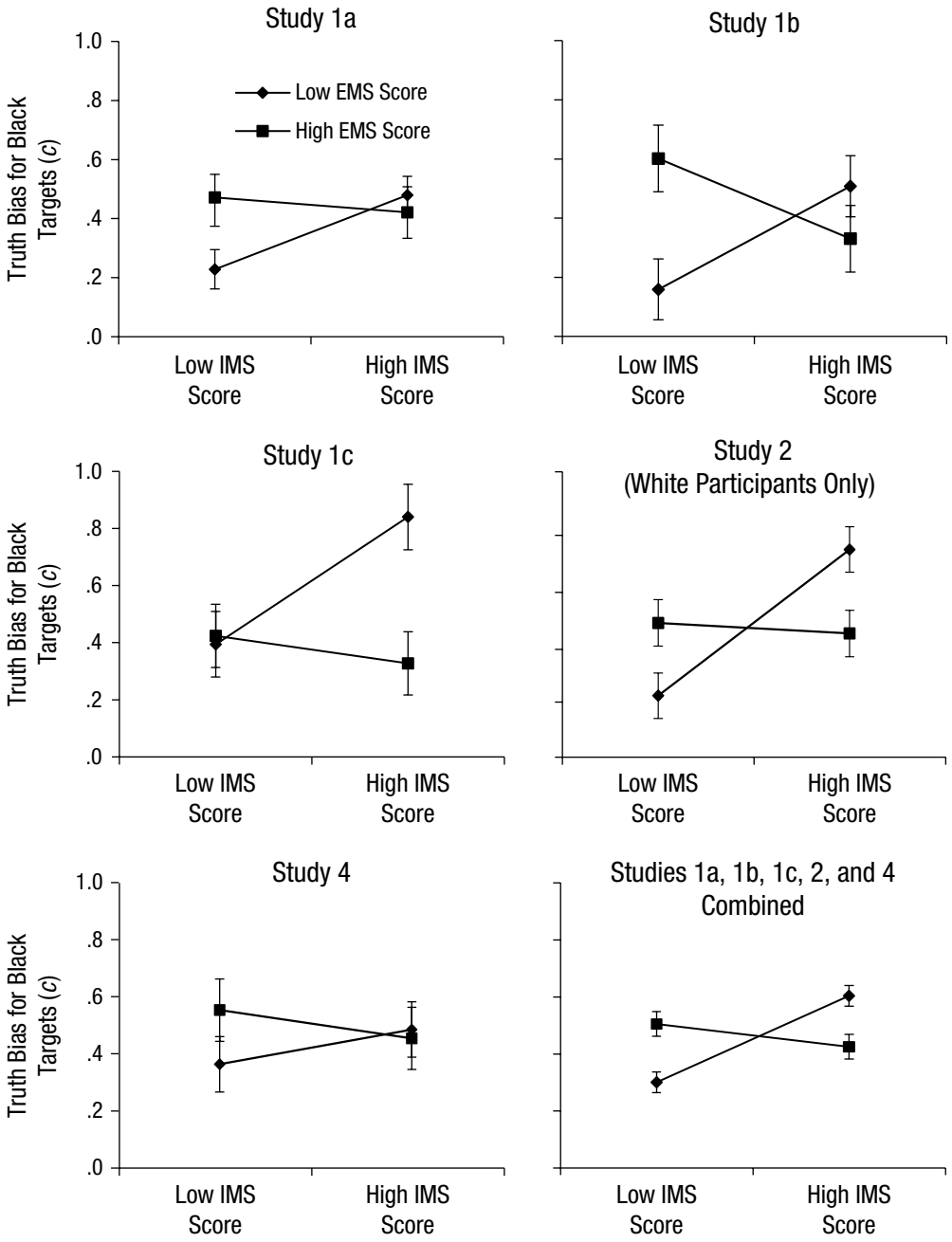

Fig. 1. Results of simple-effects analyses for Studies 1a, 1b, 1c, 2, and 4: interactive effect of White participants' internal motivation (IMS scores) and external motivation (EMS scores) to respond without prejudice on truth bias for Black targets after controlling for truth bias for White targets. *Low* and *high* refer to values 1 *SD* below and above the mean, respectively. Only Study 2 included Black participants; their data were excluded from this figure. Error bars represent 95% confidence intervals.

Procedure. Participants completed the deception-judgment task in addition to the IMS ($M = 7.35$, $SD = 1.35$, $\alpha = .80$) and EMS ($M = 4.91$, $SD = 1.80$, $\alpha = .82$). We used a larger, 17-item measure of intergroup contact ($M = 7.35$, $SD = 1.35$, $\alpha = .87$) adapted from Kunstman et al. (2013). Despite using this more extensive measure, contact was not correlated with truth bias for Black or White targets ($ps > .406$) and did not moderate the findings reported ($ps > .320$).

Results

As in Study 1a, participants exhibited greater truth bias when responding to Black targets (mean $c = 0.36$, $SD = 0.50$,

95% CI = [0.23, 0.48]) than White targets (mean $c = -0.12$, $SD = 0.58$, 95% CI = [−0.27, 0.02]), paired-samples $t(64) = 7.55$, $p < .001$, 95% CI for the difference between means = [0.35, 0.61], $d = 0.93$. Also as in Study 1a, participants exhibited a significant truth bias for Black targets, $t(64) = 5.71$, $p < .001$, $d = 1.43$, and a lie bias (albeit marginal) for White targets, $t(64) = -1.74$, $p = .087$, $d = -0.44$.

To explore the role of prejudice-related concerns, we again regressed truth bias for Black targets on centered IMS score, centered EMS score, and their interaction, and we also included truth bias for White targets as a covariate. The interaction between IMS score and EMS score was significant (see Fig. 1, top right), $b = -0.06$, 95% CI = [−0.11, −0.02], $\beta = -0.30$, $t(60) = -2.96$, $p = .004$. At low EMS scores (i.e., 1 *SD* below the mean), IMS score predicted truth bias for Black targets, $b = 0.13$, 95% CI = [0.03, 0.23], $\beta = 0.35$, $t(60) = 2.51$, $p = .015$, such that as IMS score increased, truth bias for Black targets also increased. However, for high EMS scores (i.e., 1 *SD* above the mean), the relation was marginally significant and in the opposite direction, $b = -0.10$, 95% CI = [−0.21, 0.01], $\beta = -0.27$, $t(60) = -1.79$, $p = .079$. Once again, participants who were unmotivated to respond without prejudice (i.e., low IMS and EMS scores) showed the lowest truth bias toward Black targets.

Study 1c

Study 1c was a direct replication of Study 1b, except that we used online participants.

Method

Participants. Sixty-one White American participants were recruited from Amazon Mechanical Turk (MTurk). Two participants were excluded from analyses for failing one or more attention checks (Oppenheimer, Meyvis, & Davidenko, 2009). Thus, the final sample was 59 participants (56% were female, 42% were male, and 2% indicated they did not identify as male or female or preferred not to respond; mean age = 32.36 years, $SD = 10.42$). Including the excluded participants in the analyses did not alter the findings.

Procedure. The procedure was identical to that in Study 1b, except as noted. Participants completed the deception-judgment task in addition to the IMS ($M = 7.59$, $SD = 1.42$, $\alpha = .86$) and EMS ($M = 4.77$, $SD = 1.60$, $\alpha = .77$). The only modification in the current study was that participants completed a 10-item measure assessing interpersonal contact both with Whites and with Blacks. Participants responded to each item on a 10-point scale with anchors of *0* and *9 or more* (e.g., "How many Black [White] friends do you have in college?"; mean number of White contacts = 8.06, $SD = 2.15$, $\alpha = .85$; mean number of Black contacts = 3.43, $SD = 1.88$, $\alpha = .76$; adapted from Kunstman et al., 2013). Number of Black contacts, number of White contacts, and the difference between them (i.e., White contacts minus Black contacts) did not moderate the findings reported (*p*s > .130).

Results

Participants used the truth response more for Black targets (mean $c = 0.48$, $SD = 0.61$, 95% CI = [0.32, 0.64]) than for White targets (mean $c = -0.03$, $SD = 0.60$, 95% CI = [−0.19, 0.12]), paired-samples $t(57) = 8.30$, $p < .001$, 95% CI for the difference between means = [0.39, 0.64], $d = 1.09$. Participants again demonstrated a sizable truth bias for Black targets, $t(57) = 5.98$, $p < .001$, $d = 1.58$, but no truth bias for White targets, $t(57) = -0.42$, $p = .673$, $d = -0.11$.

To investigate whether individual differences in prejudice-related concerns predicted the truth bias for Black targets, we again regressed truth bias for Black targets on centered IMS, centered EMS, and their interaction, and we included truth bias for White targets as a covariate. Once again, the anticipated interaction between IMS score and EMS score was significant (see Fig. 1, middle left), $b = -0.06$, 95% CI = [−0.11, −0.01], $\beta = -0.20$, $t(53) = -2.28$, $p = .026$. For low EMS scores (i.e., 1 *SD* below the mean), IMS score predicted truth bias for Black targets, $b = 0.16$, 95% CI = [0.04, 0.27], $\beta = 0.37$, $t(53) = 2.70$, $p = .009$, such that as IMS score increased, truth bias for Black targets also increased. However, for high EMS scores (i.e., 1 *SD* above the mean), the relation was nonsignificant, $b = -0.03$, 95% CI = [−0.14, 0.08], $\beta = -0.08$, $t(53) = -0.62$, $p = .536$.

Discussion: Studies 1a Through 1c

Studies 1a through 1c documented systematic racial biases in deception judgments. In findings consistent with the prejudice-related-concerns hypothesis, White participants demonstrated an exacerbated truth bias for Black targets relative to White targets, which was moderated by individual differences in prejudice-related concerns. Whereas unmotivated participants (i.e., those with low internal and external motives to control prejudice) showed the lowest truth bias for Black targets, participants who are effective in regulating bias in most contexts (i.e., those who are primarily internally motivated to control prejudice) showed the strongest racial bias—in favor of Black targets. Participants relatively high in both internal and external motives or relatively high in external motives but relatively low in internal motives were more variable. At times they responded quite similarly to effective participants (e.g., in the lab samples) and at other times they were more similar to unmotivated participants (e.g., in the online sample). These variations

notwithstanding, across three studies we observed a truth bias favoring Black targets that was moderated by interactions between IMS and EMS scores, which supports the prejudice-related-concerns hypothesis.

Previous research suggests that, in general, perceivers show a truth bias for all targets. We were somewhat surprised that we did not replicate this classic truth bias for White targets. One potential explanation is that White perceivers' prejudice-related concerns may both amplify their positivity toward Black targets and temper their positivity toward White targets. Indeed, intergroup biases can be the product of biases toward both out-groups and in-groups (Brewer, 1999). To explore this possibility, we collected data for two additional studies: one in the lab (n = 132) and one online (n = 77). In these studies, White perceivers (lab: 59% female, 41% male; mean age = 18.69 years, SD = 0.77; online: 61% female, 38% male, 1% unreported gender; mean age = 36.92 years, SD = 13.60) performed the same deception-detection task used in Studies 1a through 1c, but only for White targets. By removing Black targets, we aimed to reduce the salience of target race and attenuate perceivers' motivation to correct for racial bias. Indeed, both the lab sample (mean c = 0.25, 95% CI = [0.19, 0.31]) and the online sample (mean c = 0.11, 95% CI = [0.01, 0.20]) of White perceivers showed clear evidence of classic truth bias, one-sample $t(131)$ = 8.43, $p < .001$, d = 1.47, and one-sample $t(76)$ = 2.29, p = .025, d = 0.52, respectively. This finding provides further evidence that truth bias for Black targets—and lie biases for White targets—in Studies 1a through 1c serve Whites' prejudice-related concerns.

Study 2

Study 2 replicated Studies 1a through 1c, but included both White and Black participants, which allowed us to clarify the prejudice-related-concerns hypothesis. Because social norms to avoid racial prejudice are more salient for Whites than for Blacks, we expected that Black perceivers would not show truth biases toward White targets. If anything, we expected that Black participants might show a greater truth bias for Black targets than for White targets (an in-group favoritism effect) and that their judgments would not reflect motives to respond without prejudice.

Method

Statistical power and participants. With the addition of a between-subjects factor (i.e., participant's race) and anticipating data loss because of online recruitment, we set a recruitment goal of 240 participants (120 Black, 120 White). We obtained a sample of 133 Black and 122 White Americans, recruited via MTurk and the SocialSci online subject-recruitment platforms. Twelve participants (9 Black, 3 White) were excluded from analyses for failing one or more attention checks (Oppenheimer et al., 2009). In addition, 2 participants (1 Black, 1 White) were eliminated from analyses because the race they reported during the qualification survey was different from that reported on the demographic questionnaire at the end of the study. Thus, the final sample consisted of 241 participants (123 Black, 118 White; 63% female, 37% male, 1% unreported gender; mean age = 32.08 years, SD = 10.48). Retaining the excluded participants in analyses did not alter the findings

Procedure. Potential participants first completed a brief qualification survey consisting of demographic items. Those who qualified (i.e., those who self-reported their race as Black or White) were invited to participate in the study.

Participants completed the same lie-detection task used in Studies 1a through 1c. Next, they completed the IMS and EMS. White participants responded to items about their motives toward Blacks, and Black participants responded to items about their motives toward Whites (for similar procedures, see Kunstman et al., 2013).

At the conclusion of the study, participants completed the Suspicion of Motives Index (Major, Sawyer, & Kunstman, 2013) and a questionnaire regarding experience with personal discrimination (Major et al., 2013). These measures were collected as exploratory data for another project and are not discussed in detail. Participants then completed the 10-item measure assessing interpersonal contact with Whites and with Blacks used in Study 1c (for Black participants—number of Black contacts: M = 7.41, SD = 2.28, α = .86; number of White contacts: M = 6.48, SD = 2.71, α = .88; for White participants—number of Black contacts: M = 3.68, SD = 1.78, α = .70; number of White contacts: M = 7.98, SD = 1.92, α = .81; Kunstman et al., 2013).

Results

We calculated truth-bias scores (i.e., c scores) for each participant, separately for Black and White targets. We then submitted these scores to a 2 (participant race: White vs. Black) × 2 (target race: White vs. Black) mixed-model analysis of variance (ANOVA), with the second factor repeated. Our results replicated those of Studies 1a through 1c: We observed a main effect of targets' race, $F(1, 239)$ = 81.03, $p < .001$, 95% CI for the difference between means = [0.31, 0.49], η_p^2 = .25, in which participants again displayed greater truth bias for Black targets (mean c = 0.33, 95% CI = [0.24, 0.41]) than for White targets (mean c = −0.08, 95% CI = [−0.16, 0.01]). Participants demonstrated a truth bias for Black targets, $t(240)$ = 7.50,

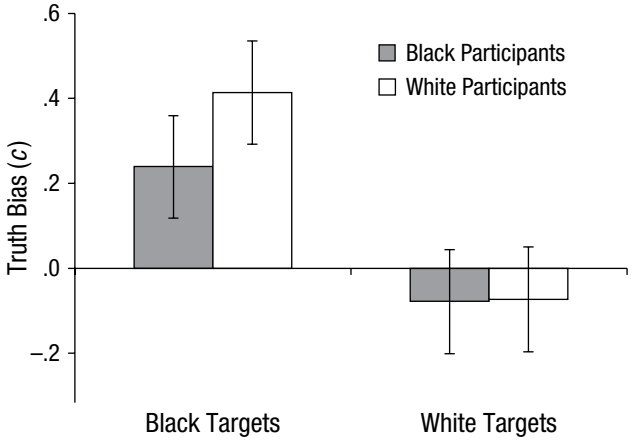

Fig. 2. Results from Study 2: Black and White participants' truth bias when judging Black and White targets. Error bars indicate 95% confidence intervals.

$p < .001$, $d = 0.97$, but a marginal lie bias for White targets, $t(240) = -1.74$, $p = .084$, $d = -0.22$.

This effect was qualified by a marginal interaction with participant's race, $F(1, 239) = 3.86$, $p = .051$, $\eta_p^2 = .02$. As Figure 2 shows, White and Black participants gave the truth response equivalently for White targets, $t(239) = -0.10$, $p = .920$, 95% CI for the difference between means = [−0.18, 0.16], $d = -0.01$. However, for Black targets, White participants showed a greater truth bias than did Black participants, $t(239) = -2.14$, $p = .033$, 95% CI for mean c = [−0.36, −0.01], $d = -0.28$. There was no main effect of participant's race on truth bias, $F(1, 239) = 1.69$, $p = .196$, 95% CI for mean c = [−0.24, 0.05], $\eta_p^2 = .01$.

We next examined how prejudice-related concerns may have differentially influenced Black and White participants' response selection. We regressed truth bias for Black targets on participant's race (dummy coded as Black = 0 and White = 1), centered IMS score, centered EMS score, and all possible interaction terms, and we entered truth bias for White targets as a covariate. We observed a significant three-way interaction among participant's race, IMS score, and EMS score, $b = -0.05$, 95% CI = [−0.09, −0.01], $\beta = -0.18$, $t(232) = -2.34$, $p = .020$. Among Black participants, we did not observe any interaction between IMS score and EMS score, $b = 0.01$, 95% CI = [−0.02, 0.04], $\beta = 0.05$, $t(232) = 0.59$, $p = .554$. We then recentered the race term to set the reference group to White participants and recomputed all interaction terms, including participant's race. We replicated the interaction between IMS score and EMS score observed in Studies 1a through 1c among White participants, $b = -0.04$, 95% CI = [−0.07, −0.01], $\beta = -0.23$, $t(232) = -2.62$, $p = .009$ (Fig. 1, middle right). For low EMS scores (i.e., 1 *SD* below the mean), there was a significant simple slope of IMS score, $b = 0.15$, 95% CI = [0.07, 0.23], $\beta = 0.39$, $t(232) = 3.57$, $p < .001$, such that as IMS scores increased, so too did White participants' truth bias for Black targets. This simple slope did not extend to high EMS scores (i.e., 1 *SD* above the mean), $b = -0.01$, 95% CI = [−0.09, 0.07], $\beta = -0.03$, $t(232) = -0.25$, $p = .801$.

We used an alternate (and more conservative) method of determining whether the interaction between IMS and EMS scores differed by participant's race by splitting the data file by participant's race and conducting two separate two-way interactions, which allowed IMS score and EMS score to be centered separately for Black and White participants. This analysis yielded similar results. Among Black participants, we did not observe an interactive effect of IMS score and EMS score on truth bias for Black targets, $b = 0.00$, 95% CI = [−0.03, 0.03], $\beta = 0.02$, $t(118) = 0.20$, $p = .843$, but we did observe the interactive effect for White participants, $b = -0.03$, 95% CI = [−0.06, −0.00], $\beta = -0.19$, $t(113) = -2.08$, $p = .040$.

Discussion

Study 2 provided novel evidence for race-based biases in deception judgments. Both Black and White participants revealed greater truth bias for Black targets than for White targets, but this effect was stronger for White participants than for Black participants. Race-based motives acting on White and Black participants' judgments were qualitatively different. Black perceivers' responses did not appear to be motivated by prejudice concerns. Conversely, White participants' desire to respond without prejudice was related to greater truth bias for Black targets, which replicated the results of Studies 1a through 1c.

Study 3

The main effect of truth bias observed in the previous studies could have been due to different message content in the videos of Blacks and Whites. However, if prejudice-related concerns underlie the observed effects, these truth biases should respond to manipulations of the *apparent* race of targets, holding the statements themselves constant. Accordingly, we manipulated the apparent race of targets by separating the audio and the video used in the previous studies. We paired selected race-ambiguous audio tracks with still images of both Black and White speakers.

Method

Materials. On the basis of a pretest with research assistants who were naive to the hypotheses, we identified relatively race-ambiguous voices from the audio used in

the previous studies; 8 targets (4 Black, 4 White) were selected. Specifically, the research assistants listened to audio (without video) from all 20 targets used in Studies 1a through 2 and selected the audio clips that sounded most race ambiguous. For each selected target, we used audio from all four of the videos they created, making a total of 32 audio files. We then replaced the video content of each target file with still-frame images taken from other video clips. None of the audio tracks was paired with an image of the person who actually recorded it.

Statistical power and participants. On the basis of the same power analysis used in Study 1a, we sought to recruit 67 White participants by setting a recruitment goal of 77 participants. We collected responses from 78 White American MTurk workers who were compensated for their participation. Ten participants were excluded from analyses for failing a suspicion check. This left 68 participants for the analyses (53% female; mean age = 39.03 years, *SD* = 13.61).

Procedure. Participants were randomly assigned to one of four counterbalancing conditions where they listened to 16 audio files (8 from Black male speakers, 8 from White male speakers). Participants heard each speaker tell one truth and one lie. Each audio file was paired with a still image (either a Black male or a White male), and they were told that the still image was the person speaking in the audio file (however, the still image was never the actual speaker). Thus, for half of the trials, the race of the speaker matched the race of image (i.e., audio from Black speaker with an image of a Black speaker or audio from a White speaker with an image of a White speaker). For the remaining trials, the speaker and image were mismatched on race (i.e., audio from Black speaker with an image of a White speaker or audio from a White speaker with an image of a Black speaker). All audio files were paired with both same-race images and cross-race images; however, this manipulation was between subjects such that each participant always heard the same voice paired with the same image. After each audio file concluded, participants rendered a truth-or-lie decision about the statement they just heard.

At the conclusion of the study, participants completed the 10-item measure of contact with Blacks and Whites described in Study 1c (number of White contacts: M = 7.92, SD = 2.19, α = .86; number of Black contacts: M = 2.29, SD = 2.28, α = .85; Kunstman et al., 2013). Participants were also asked if they noticed anything odd about the study. Participants who indicated suspicion about whether the audio was created by the target person pictured—who guessed that the purported speaker was not the actual speaker—were not included in analyses (i.e., the 10 individuals noted earlier).

Results

Signal detection analyses were not feasible because with only 8 videos for each race, many cells were either full (i.e., 1) or empty (i.e., 0). Thus, we used the proportion of truth responses as our measure of truth bias (proportions above .5 indicated greater use of the truth response than the lie response and hence greater values correspond with greater truth bias).

Of primary interest was whether targets' apparent race moderated the proportion of truth responses. We conducted a paired-samples t test comparing the proportion of truth responses for files accompanied by images of Black targets and the proportion of truth responses for files accompanied by images of White targets. Participants tended to use the truth response more when the audio was accompanied by an image of a Black target (M = .64, SD = .20) than when the same audio was accompanied by an image of a White target (M = .58, SD = .18), $t(67)$ = 1.96, p = .054, 95% CI for the difference in means = [.00, .11], d = 0.24.

Discussion

These findings, although marginally significant, were consistent with our previous findings that race biased ascriptions of honesty. White perceivers' selection of the truth response was affected by the target's apparent race. Even when statement content and audio was held constant, White participants tended to label a target as more truthful when they believed the target was Black rather than White.

Study 4

The studies we have reported thus far investigated perceivers' deliberative deception judgments. However, deception processing can occur outside of awareness (ten Brinke, Stimson, & Carney, 2014; cf., Franz & von Luxburg, 2015). Consequently, deliberative and spontaneous indicators may reveal different truth-bias outcomes. Moreover, deception judgments are often made spontaneously (e.g., when police determine whether to trust stopped motorists). Accordingly, understanding how bias unfolds earlier in the information processing stream is important. In Study 4, we investigated whether, despite showing a greater truth bias for Black targets relative to White targets in deliberative judgments, White perceivers might demonstrate a greater lie bias for Black targets relative to White targets earlier in information processing. Indeed, dissociations between deliberative and spontaneous behaviors in intergroup relations are well documented (Amodio & Devine, 2006; Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001). In the current study, we used eye tracking

to measure how quickly participants initially fixated on the "truth" response box or "lie" response box during the deception-judgment task to reveal upstream, spontaneous biases.

Method

Statistical power and participants. On the basis of the power analysis used in Study 1a, we attempted to recruit 67 White participants. Anticipating some data loss because of the eye-tracking method, we recruited 86 White undergraduate students (52% female, 47% male, 1% unknown; mean age = 18.77 years; *SD* = 0.86). All participants were calibrated on the eye tracker, and all participants' data were retained in analyses.

Procedure. Participants first completed a calibration procedure to ensure that their gaze was being tracked. Next, they completed a deception-judgment task similar to the one in Studies 1a through 2. However, in this version of the task, the "truth" and "lie" response boxes appeared below the video in a large typeface. The location of the "truth" and "lie" response boxes did not vary across targets; the "truth" response box was in the bottom left corner, and the "lie" response box was in the bottom right corner. This arrangement allowed us to determine how quickly participants first looked at each response option and for how long. After each video, participants used the mouse to select whether they thought the target had been truthful or telling a lie. Next, participants completed the IMS ($M = 7.45$, $SD = 1.46$, $\alpha = .82$) and EMS ($M = 5.00$, $SD = 1.68$, $\alpha = .77$), the contact measure used in Study 1c (number of Black contacts: $M = 4.79$, $SD = 2.25$, $\alpha = .88$; number of White contacts: $M = 9.47$, $SD = 0.96$, $\alpha = .60$), and a demographics questionnaire.

Eye-tracking apparatus and measures. Participant eye gaze was recorded using a T60XL eye tracker (Tobii Technology, Stockholm, Sweden) and Tobii Studio (Version 3.3.1). Two eye-tracking measures were collected: time to the first fixation (i.e., the time in seconds from the onset of the stimulus until first gaze fixation on a given area of interest) and the total duration of all fixations within an area of interest (in seconds). Time to first fixation and total fixation duration were calculated for two visual areas of interest: the "truth" response box and the "lie" response box.

Results

Deliberative responses. As in the previous studies, participants exhibited greater truth bias for Black targets (mean $c = 0.46$, $SD = 0.49$, 95% CI = [0.35, 0.57]) than for White targets (mean $c = -0.06$, $SD = 0.46$, 95% CI = [−0.16, 0.03]), paired-samples $t(85) = 8.80$, $p < .001$, 95% CI for the difference in means = [0.41, 0.64], $d = 0.95$. Participants demonstrated a significant truth bias for Black targets, $t(85) = 8.66$, $p < .001$, $d = 1.88$, but no response bias for White targets, $t(85) = -1.30$, $p = .197$, $d = -0.28$. To investigate whether prejudice-related concerns moderated this bias, we again regressed truth bias for Black targets on centered IMS score, centered EMS score, and their interaction term, and we included truth bias for White targets as a covariate. The interaction between IMS score and EMS score that was previously observed in Studies 1a, 1b, 1c, and 2 did not achieve significance in Study 4, $b = -0.02$, 95% CI = [−0.07, 0.02], $\beta = -0.11$, $t(85) = -1.00$, $p = .323$. Despite being nonsignificant, the interaction pattern was descriptively consistent with results from Studies 1a through 2 (see Fig. 1, bottom left).

Although this nonsignificant finding may cast some doubt on the interaction between IMS score and EMS score, because Studies 1a, 1b, 1c, 2, and 4 all used the same stimuli and included the IMS and EMS, we were able to conduct a meta-analysis of the data from White participants in these five studies to ensure the reliability of the effect. We calculated the effect size for the interactive effect of IMS score and EMS score on truth bias for Black targets when we controlled for truth bias for White targets, separately for each study. As in Rosenthal and Rosnow (1991), effects were weighted by their sample size in a given study. Across all five studies, the interactive effect of IMS score and EMS score on truth bias for Black targets when we controlled for truth bias for White targets was significant ($z = -3.53$, $p < .001$; for the interactive effect across studies, see Fig. 1, bottom right). The corresponding weighted effect-size estimate (r) across the studies was −.21, 95% CI = [−.29, −.12], indicating a small to medium-size effect (for a scatterplot depicting the distribution of IMS and EMS scores across all the studies, see the Supplemental Material).

Eye gaze. Next, we explored whether the targets' race influenced perceivers' attention to the areas of interest (i.e., the "truth" response box and the "lie" response box) during the deception-judgment task. The mean time to first fixation for the two areas of interest was computed separately for Black targets and White targets. In addition, the mean proportion of total fixation duration (i.e., total fixation duration divided by length of trial, computed separately for White targets and Black targets) was calculated for the two areas of interest. Of primary interest was whether, despite a truth bias for Black targets in deliberate judgments (i.e., more truth responses for Black targets than for White targets), participants might show a lie bias for Black targets earlier in the information processing stream (i.e., earlier first fixation on the "lie" response box

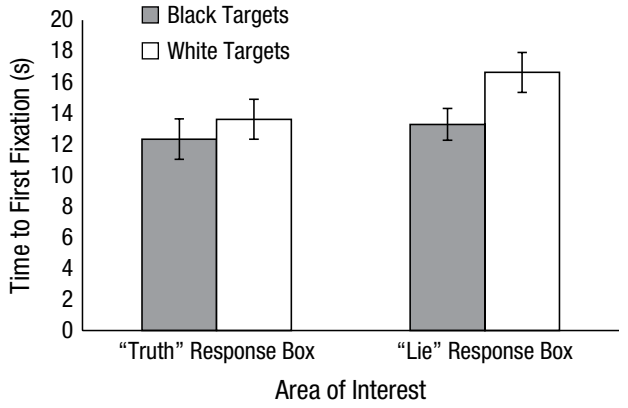

Fig. 3. Eye-tracking results from Study 4. The graph shows the time to first fixation on the "truth" response box and the "lie" response box, separately for Black and White targets. Error bars indicate 95% confidence intervals.

for Black targets than for White targets). Accordingly, a 2 (target's race: Black vs. White) × 2 (area of interest: truth response vs. lie response) repeated measures ANOVA on time to first fixation was conducted. This analysis yielded significant main effects of target's race, $F(1, 81) = 11.35$, $p < .001$, 95% CI for the mean difference between Black and White = [−3.55, −0.91], $\eta_p^2 = .12$, and of area of interest, $F(1, 81) = 12.50$, $p < .001$, 95% CI for the mean difference between truth and lie = [−3.55, −0.99], $\eta_p^2 = .13$. Overall, perceivers were faster to look at the response boxes for Black targets than for White targets, and they were faster to look at the "truth" response box than at the "lie" response box. These effects were qualified by the Target's Race × Area of Interest interaction, $F(1, 81) = 6.14$, $p = .015$, $\eta_p^2 = .07$. As Figure 3 shows, perceivers attended to the "truth" response box equally quickly for Black and White targets, $t(82) = -1.36$, $p = .178$, 95% CI = [−2.72, 0.51], $d = -0.15$. However, perceivers were significantly faster to first fixate on the "lie" response box for Black targets ($M = 13.39$ s, $SD = 4.65$) compared with White targets ($M = 16.75$ s, $SD = 5.86$), $t(82) = -4.23$, $p < .001$, 95% CI = [−4.94, −1.78], $d = -0.46$. Prejudice-related motives did not moderate this bias in attentional deployment to the "lie" response box (ps > .145).

We conducted a similar analysis with proportion of total trial fixation duration as the dependent variable. Because the truth and lie response boxes did not provide meaningful cues to deception, it was unsurprising that participants' fixation duration on these areas of interest was quite low ($M = 0.15$, $SD = 0.08$) and did not yield significant effects (ps > .106).

Discussion

Study 4 replicated the previously observed truth bias for Black targets and also demonstrated that White perceivers initially gazed more quickly at the "lie" response for Black targets than for White targets. This suggests an early tendency toward considering Blacks to be liars, which is then overcome by subsequent processing (Devine et al., 2002).

General Discussion

The current findings revealed systematic race-based effects in deception judgments. White perceivers consistently judged Black targets as more truthful than White targets on deliberative measures of deception-detection bias, an effect apparently resulting from White perceivers' prejudice-related concerns. Whites unmotivated to control prejudice toward Blacks showed the smallest effects of race on truth bias. Whites who are effective across most contexts in being nonprejudiced (i.e., primarily internally motivated) were paradoxically the most biased in their judgments of Black relative to White targets (i.e., biased in favor of Black targets). Although past work demonstrates the benefits of prejudice-related concerns (Devine et al., 2002; Kunstman et al., 2013; Plant, Devine, & Peruche, 2010), we identify a context in which these motives may not benefit perceivers. Indeed, a necessary consequence of selecting the truth response in general is that perceivers will miss more lies, a potentially costly strategy.

These overtly positive biases did not reflect early information processing, as measured by initial eye gaze. Instead, White perceivers attended faster to the lie response for Black targets relative to White targets, which is consistent with previous research showing that Whites' overt positive behaviors are often accompanied by negative responses that are spontaneous and covert (Dovidio, Kawakami, et al., 2002; McConnell & Leibold, 2001; Mendes & Koslov, 2013). Thus, even if Whites express explicit trust in Black targets, such trust may not manifest in speeded, nonverbal, and spontaneous responses. This finding is particularly disconcerting considering that some important trust judgments are made under time pressure or resource depletion (e.g., decision to trust potentially armed suspects reaching into pockets or holding ambiguous objects; Akinola & Mendes, 2012; Correll et al., 2002), which could translate this spontaneous anti-Black bias into action.

Despite its strengths, the current work has limitations. First, responses to the IMS and EMS questionnaires were always collected after the lie-detection task, which leaves open the possibility that they were affected by the preceding decisions. Second, all the targets in these studies were male. Our findings could have been moderated by targets' gender because of associations between race and gender (Johnson, Freeman, & Pauker, 2012).

Despite these concerns, we observed systematic race-based biases in deception judgments across the information processing stream. Although Whites showed evidence of initial mistrust for Black targets, prejudice-related concerns

held by White (but not Black) perceivers dominated subsequent judgments, producing truth biases for Black targets relative to White targets. These findings highlight the dynamic interplay of race, of both perceivers and targets, in intergroup relations and social perception biases.

Action Editor

Wendy Berry Mendes served as action editor for this article.

Author Contributions

E. P. Lloyd developed the research concept with the guidance of K. Hugenberg and A. R. McConnell. All the authors contributed to the study designs. E. P. Lloyd and J. C. Deska programmed the studies. Data analyses and interpretation were performed by E. P. Lloyd under the supervision of K. Hugenberg, A. R. McConnell, and J. W. Kunstman. E. P. Lloyd drafted the manuscript. K. Hugenberg, A. R. McConnell, J. W. Kunstman, and J. C. Deska provided critical revisions. All the authors approved the final version of the manuscript for submission.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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Supplemental Material

Additional supporting information can be found at http://journals.sagepub.com/doi/suppl/10.1177/0956797617705399

Open Practices

All data have been made publicly available via Open Science Framework and can be accessed at https://osf.io/w2434/. The deception-detection videos are not publicly accessible because they contain information identifying participants. Researchers interested in using the videos can access them free of charge at https://sc.lib.miamioh.edu/handle/2374.MIA/6067. Researchers will be required to confirm their affiliation with an academic institution and sign a usage agreement. The complete Open Practices Disclosure for this article can be found at http://journals.sagepub.com/doi/suppl/10.1177/0956797617705399. This article has received the badge for Open Data. More information about the Open Practices badges can be found at https://www.psychologicalscience.org/publications/badges.

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